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ABSTRACT

The purpose of the Program of Special Directed Studies (PSDS) is: (1) to identify a group of secondary school seniors and recent graduates with marked intellectual ability and potential for academic attainment whose achievement, as measured by standard tests and school records, is inadequate to secure admission to degree programs at accredited and selective colleges and universities; and (2) to prepare a selected group of such students, by a two year program of carefully planned and supervised studies, to move into a standard degree program at an appropriate level and successfully to complete it. The population from which PSDS students are to be selected is defined by two criteria: (1) that they do not have a record of academic achievement adequate enough to secure admission by traditional criteria to a degree program at a selective college or university; and (2) that the main reason for this lack of achievement be due to a cultural or social disadvantage. This report is an attempt to discuss and to define these terms, to provide a model for admissions based upon them, and to evaluate past admissions procedures with respect to this model. Since the two criteria given above define a potential student population much larger than the number of students the program can accept, an attempt is also made to set up criteria for selecting specific sub-groups of the defined population in an objective manner. (Author/JM)

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A PROPOSED MODEL FOR PSDS ADMISSIONS

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ABSTRACT

The Program of Special Directed Studies is interested in placing disadvantaged or risk students into the selective Claremont Colleges. Operational definitions of the words "disadvantaged" and "risk" are proposed, and an evaluation of past admissions procedures is offered on the basis of these definitions. It is pointed out that far greater than forty applicants each year would qualify for consideration for PSDS on the basis of the proposed definitions of disadvantaged and risk; ten objectively definable, possible admissions criteria are suggested as a means of selecting a sub-group of this applicant population for admission. It is assumed that in selecting any such sub-group, academic success at the Claremont Colleges is the primary goal. However, "success" is a word which has not been well defined in connection with the PSDS program; therefore, an operational definition of success is offered, and the effectiveness of the proposed admissions model is evaluated by comparing each of the ten variables to four measures of success. In the course of the evaluation, revised admissions models are developed on the basis of sex and home college, and significant correlations between these revised models and the measures of success are observed. It is recommended that PSDS accept the operational definitions of disadvantaged and risk developed in this report, and that the model for admissions be incorporated into the present selection procedure. Suggestions for the implementation of these recommendations are also advanced.

A PROPOSED MODEL FOR PSDS ADMISSIONS

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"The purpose of the Program of Special Directed Studies is 1) to identify a group of secondary school seniors and recent graduates with marked intellectual ability and potential for academic attainment whose achievement, as measured by standard tests and school records, is inadequate to secure admission to degree programs at accredited and selective colleges and universities, and 2) to prepare a selected group of such students, by a two year program of carefully planned and supervised studies, to move into a standard degree program at an appropriate level and successfully to complete it. This proposal assumes that, in the case of most of the students selected for admission, the chief reason for a lack of academic attainment will be a limited (sic) cultural background and an absence of the necessary information and encouragement to stimulate academic ambition." (Claremont Colleges, 1968, p. 1)

The population from which PSDS students are to be selected is defined by two criteria: 1) that they do not have a record of academic achievement adequate enough to secure admission by traditional criteria to a degree program at a selective college or university, and 2) that the main reason for this lack of achievement be due to a cultural or social disadvantage. This report is an attempt to discuss and to define these terms, to provide a model for admissions based upon them, and to evaluate past admissions procedures with respect to this model. Since the two criteria given above define a potential student population much larger than the number of students the program can accept, an attempt will also be made to set up criteria for selecting specific sub-groups of the defined population in an objective manner.

Definition of Disadvantaged

One of the PSDS objectives is the placement of "risk" or "disadvantaged" students into the Claremont Colleges; both terms have often been used to describe the kinds of students who are sought for PSDS. Before going further, it is important that these two words be carefully examined and defined, because their meanings are quite different, and it is the unique relationship between them which is the primary basis for selection for the PSDS program.

According to the original program proposal those accepted were to be high school students and recent graduates from "disadvantaged" backgrounds; that is, those from ethnic and/or poverty sub-cultures who do not have the economic, social, cultural, emotional, or educational advantages of the majority of the students their age. No more specific definition is offered, but the following categories seem to have been considered disadvantageous by the PSDS staff, and will provide the basis for an operational definition of the word: 1) The student is from a minority group (this in itself) does not mean that a student is "disadvantaged", but PSDS is particularly interested in minority students who also fall into the other categories). 2) He comes from a low-income family or a family whose limited income must be divided among a large number of dependents. 3) He has had to work to help support his family. 4) He has been deprived of the material possessions, such as books and magazines, or has not experienced the activities, such as private music lessons, camp and travel, normally associated with children growing up in advantaged homes. 5) Because of his home living situation, he has had no adequate place to study. 6) He has difficulty with the English language. 7) He has attended elementary and secondary schools which may not have adequately prepared him academically for college; he has not developed an average reading speed or good study habits. 8) His home life has involved not living with his complete or natural family, having both parents employed, or frequently having changed places of residence. 9) He has a police record. Operational definitions for each of these nine categories are offered in the next section.

It is probably safe to assume that an applicant is more disadvantaged as he falls into more and more of the categories, yet it is obvious that an applicant need not fall into all nine categories to qualify for admission to PSDS as a disadvantaged student. However, there may be certain of the categories that are essential. The original proposal suggests that category two, "He comes from a low-income family or a family whose limited income must be divided among a large number of dependents," may be such a case, and for this report it will be so defined. This is to say that an applicant who does not come from a family of limited financial resources cannot be considered to be disadvantaged, unless there are exceptional circumstances, defined as falling into at least half of the other eight categories. This would be especially true if the applicant were not a member of a minority group. However, financial need, of and by itself does not qualify an applicant as disadvantaged either. In addition to low income, the applicant should fall into at least two other categories before he is considered to be disadvantaged. For a summary of the criteria proposed for qualification as disadvantaged, refer to Figure 1.

Figure 1

Summary of Proposed Criteria for Qualification as Disadvantaged

Limited Financial Resources	Yes	Falls into any 2 other categories	Yes*
			No
	No	Falls into any 4 other categories	Yes*
			No

*Qualifies as disadvantaged

Comparison of PSDS Students to the Definition of Disadvantaged

This section will compare admitted PSDS students to the previously outlined operational definition of disadvantaged and explore how well the objectives have been met. From application forms, test scores, high school grades, and other data collected concerning the eighty PSDS students selected for the first two years of the program's operation, we can determine how well the students fit the criteria outlined in the PSDS proposals. In addition, there is information on students who applied for admittance in September, 1969, but who were denied entrance into PSDS. This rejection group (R-group) is divided into two categories on the basis of letters sent to them: an R-group 1 letter saying that the competition was keen and that the student had not been accepted; and an R-group 2 letter saying that the student did not appear to need a program like PSDS. (Spuck, 1968; Stout and Spuck, 1969; Melendrez, 1969). This information will also be included where it sheds some light on the selection process.

How well did the students fit the category of being disadvantaged? A systematic comparison of the students entering in 1968 and 1969 to the nine criteria discussed earlier as defining disadvantaged will answer this question:

1) The student is from a minority group.

As originally set forth in the PSDS proposal, students were to come from a limited area and were to represent several racial backgrounds. Of interest is the fact that PSDS is implicitly aimed at getting more Mexican-Americans into the program than blacks and other ethnic groups. This is because PSDS originally intended its students to come primarily from Southern California, which has a large Mexican-American population. Although the vast

majority of PSDS students have come from Southern California, other students, primarily from the Southwestern United States, have been admitted to the program.

The ethnic background of the 1968 students is as follows: 26 Mexican-Americans, 11 Blacks, 2 Anglos, and 1 Puerto Rican. Thus, a large percentage of the students are from minority groups and can probably be said to have not completely shared the culture of the majority of Anglo-Americans. More diversity of ethnicity was achieved in the 1969 group, with 20 Mexican-Americans, 7 Blacks, 4 Anglos, 7 American Indians, 1 Oriental, and 1 Guamanian.

2) He comes from a low income family or a family whose limited income must be divided among a large number of dependents.

The mean annual income of 1968 PSDS students' families was $5,500, with a mean of 5.25 dependents supported on this income. Four students were orphaned or received no support from their families. However, the families of six of the students earned $10,000 or more annually, and half of the students' families consisted of not more than four children. According to the OEO guidelines for the Upward Bound Program which lists income per dependent, the families of 20 of the 40 PSDS students would not qualify as "poor" families (Office of Economic Opportunity, 1968), although their definition of poverty may be for our purposes an unrealistically low one (see Table 1). Figures for the 1969 group were similar, although indicating a slightly lower income per dependent. Three students' families earned $10,000 or more annually and 15 of 38 would not qualify as "poor" families according to OEO standards. It is interesting to note that the mean income for families of both categories of rejected applicants was higher: $7,880 for R-group 1 and $7,750 for R-group 2, although the mean number of dependents to be supported from it was also higher (5.44 and 6.62 respectively).

PSDS, unlike Upward Bound, is not interested solely in poverty students; instead it attempts to recruit students whose education was hindered as a result of the family's economic and cultural situation. This educational handicap may exist with a family income considerably above the level specified by the Upward Bound guidelines, but it must also be recognized that the median family income for regularly admitted Claremont students is quite high. At Pomona College, for example, the median family income is over $15,000 a year (Pomona College, 1969). for PSDS then, economic disadvantage should be defined relative to the regular student. In addition to the Upward Bound guideline figure, Table 1 gives a proposed upper family income limit for use with the PSDS students. This limit is based on the number of persons dependent on the income. A student's family income below this limit will be considered economically disadvantaged; a student whose family enjoys an income level above this limit will not be so considered. Families who receive state or federally funded types of welfare are considered to have met the proposed guidelines. Furthermore, students whose family income is higher than the limit proposed qualify if there has been serious mismanagement of the income, the family has had large expenditures over a long period of time (for example, a

family member may be seriously ill and require hospitalization or other expensive treatment), or if the income, for one reason or another, has not been and is not available to benefit the student.

TABLE 1

Family Income Levels Associated with Poverty and Economic Disadvantage

Family Size	Upward Bound	PSDS	
1	$1,600	$2,600	
2	2,100	3,900	
3	2,600	4,800	
4	3,300	5,700	*add $500 for each
5	3,900	6,600	additional member
6	4,400	7,500	
7	4,900	8,400	**add $900 for each
8	5,400	9,300	additional member
9	5,900	10,200	
10	6,400*	11,100**	

When the PSDS guidelines are applied to the 1968 class, twenty-seven (67.5%) students qualify as economically disadvantaged while thirteen (32.5%) do not.

The information found in Table 2 compares the PSDS families' incomes with the family income of Pomona College students, as reported by freshmen entering September 1968 (Pomona College, 1969).

TABLE 2

Comparison of Family Income: PSDS and Pomona College

Parent's Income	1968 Pomona College Freshman (%)	1968 PSDS (%)
0- 3,999	2.2	32.5
4,000- 5,999	2.5	22.5
6,000- 7,999	5.4	15.0
8,000- 9,999	9.1	15.0
10,000-14,999	22.1	15.0
15,000-Over	58.7	0.0
	100.0%	100.0%

Another way of measuring a student's socio-economic index is based upon a Socio-Economic Scale of Occupations presented by Reiss (1961). The scale ranges from 0-99, thus ranking the student's father according to his occupation, with lawyers and judges rating 93, bookkeepers 51, farm laborers 6, etc. On this scale, the fathers of 24 out of 33 of the 1968 PSDS students received scores of 30 or below, with the mean value being 24.09. This value represents jobs such as auto mechanics, bus drivers, plasterers, or road machinery operators and is about equal to the national average. Although the mean for the 1969 group on the same scale was slightly higher, 30.52 (N=7), the difference is not statistically significant; and both represent approximately the same socio-economic grouping. R-group 2's mean score was 35.28; R-group 1's was 26.00. A comparison group of 40 regularly admitted freshmen in 1968 had a mean of 58.05 (Spuck, 1969[b]). This indicates that although the occupations (and presumably incomes) of PSDS fathers are not different from the national average, they differ significantly from those of regularly admitted freshmen.

3) He has had to work to support his family.

Among the 1968 students, 8 of 40 reported that they had to work to support their families. No comparison data of any kind is available, and therefore, it is impossible to draw conclusions about how PSDS students differ from other student groups. For the eight students, of course, this is added support for qualification as disadvantaged.

4) He has been deprived of the material possessions, such as books and magazines, or has not experienced activities such as private music lessons, camp or travel, which are normally associated with children growing up in advantaged homes.

In both 1968 and 1969, the Environmental Participation Index (Mathis, 1967) was administered to entering PSDS groups; the results are summarized in Table 3.

TABLE 3

Summary of Results: Environmental Participation Index

	Possessions '68	Possessions '69	Activities '68	Activities '69
Highly Disadvantaged	5	9	2	0
Disadvantaged	13	6	7	7
Average	11	12	16	16
Advantaged	4	10	10	14
Highly Advantaged	6	2	4	2
	N=39	N=39	N=39	N=39

The mean values for both the 1968 and 1969 groups fall within the range of "Average" for both Possessions and Activities. In comparing PSDS admissions to the definition of disadvantaged students proposed in this paper, it should be noted that less than half of the PSDS students tested were identified as disadvantaged by the EPI; however, they are significantly lower than mean scores from a comparison group of regularly admitted freshmen taken in 1968, which falls into the "Advantaged" category.

5) Because of his home living situation, he has had no adequate place to study.

No direct information about this category is available; this information will be collected from each applicant in the future so that an assessment will be possible.

6) He has difficulty with the English language.

A number of PSDS students, from both the 1968 and 1969 entering classes, reported that they spoke a language other than English. Table 4 summarizes these data.

TABLE 4

Use of Language Other Than English by PSDS Students

Language other than English spoken:	1968	1969
Spanish	19	14
Indian Dialect	0	2
Chinese	0	1
Total	19	17
% of time other language spoken: (outside classroom)	1968	1969
Less than 50%	14	13
About 50%	4	2
Greater than 50%	1	2
Total	19	17

It may be that a student who speaks a language other than English more than 30% of the time outside the classroom would be at a definite disadvantage in college. If this is the case, a number of PSDS students from both years have a definite English language handicap.

As further indication of potential language difficulty in college, slightly over half of the 1968 students reported that as pre-school children their parents had not read to them; the corresponding figures for the 1969 group are 16 of 38. This would indicate that their early language involvement in any language was limited.

7) He has attended elementary and secondary schools which may not have adequately prepared him academically for college; he has not developed an average reading speed or good study habits.

There is no commonly accepted method of evaluating high schools and the quality of education they provide. However, when the 1968 students themselves were asked to comment upon their high school preparation, many felt that they were handicapped in courses and classes, especially math and English. They cited lack of interest on the part of the teacher or the school as a contributing factor. The majority of students also felt that they had been given inadequate pre-college counseling in school; as an example of this, only eight out of forty heard about PSDS through their counselor. The 1969 students expressed similar dissatisfaction with their high school preparation.

Recent studies have tended to support the argument that economically disadvantaged areas, and especially those with high minority populations, tend to have schools with fewer services, poorer facilities, less adequately prepared teachers, and a lower per pupil expenditure than areas which are more economically advantaged (Coleman, 1966; Guthre, Kleindroter, Levin, and Stout, 1969). This variation in school support is frequently as great within districts as it is between districts within a state. Since many of the students come from economically disadvantaged backgrounds, chances are good that they are also educationally disadvantaged as a result of having attended schools which did not adquately prepare them for college.

8) His home life has involved not living with his complete or natural family, having both parents employed, or frequently having changed place of residence.

The majority of PSDS students from both the 1968 and 1969 classes report that they do not generally reside with both of their natural parents. Table 5 presents these data.

TABLE 5

Person With Whom Student Generally Resides

	1968	1969
Both Parents	16	19
One Parent	15	14
Relative	2	1
Guardian	5	4
By Self	2	2
	N=40	N=40

As reported in Table 6, many PSDS students have come from families where the mother works outside the home.

TABLE 6

Mother Works Outside Home

	1968	1969
Yes	18	15
No	19	23
	N=37	N=38

Data on the frequency with which the families of PSDS students have moved is not available.

9) He has police record.

Applicants falling into this category may be at a rather severe disadvantage when attempting to gain admission to college. A record of juvenile delinquency, particularly if it has included time spent in a reformatory or placement into a foster home, is very often accompanied by a disruption of the educational process necessary for admission to college. Examples are transferring to a continuation high school, dropping out of school, or meeting high school requirements in a reformatory. Even in those cases where high school has been completed, the level of performance is likely to be far below that expected of incoming freshmen at the Claremont Colleges. Where the offenses have been committed as an adult, the picture is somewhat different; these offenses are a matter of public record, as opposed to the sealed file of the juvenile offender, and as such they are more likely to follow the individual when he is applying for employment or trying to enter college. Frequently, individuals with drug offenses or with records of disruptive or violent behavior find it very difficult to gain admission to college.

Although it would seem that applicants with a police record may have a rather severe disadvantage, no attempt is presently being made to systematically compile this information. Furthermore, because of the potential for abuse, it is our opinion that no systematic attempt should be made to solicit or record such data in the future, except in such cases where the police record itself is of prime consideration in the potential selection of the applicant. This would be particularly applicable to those whose offenses were committed as a juvenile; the court seals such records for the protection of the individual, and it would not be in the interest of any PSDS applicant to compile in this office any potentially harmful record of past offenses. However, if the student volunteers such information as a part of his application and/or bases his application for admission on this form of disadvantage, the information will be noted and compiled.

Now that data for the entire 1968 and 1969 groups have been presented for each of the nine criteria for disadvantaged status, we can see whether individual students have generally conformed to the definition given earlier. To accomplish this end, several tables and figures will be used. A review of Figure 1 (Page 3) will further clarify the following data.

FIGURE 2

Classification of 1968 PSDS Students as Disadvantaged

Limited Financial Resources	Yes N=27	Falls into any 2 other categories	Yes* N=27
			No N=0
	No N=13	Falls into any 4 other categories	Yes* N=1
			No N=12

*Qualifies as disadvantaged

FIGURE 3

Classification of 1969 PSDS Students as Disadvantaged

Limited Financial Resources	Yes N=29	Falls into any 2 other categories	Yes* N=25
			No N=4
	No N=11	Falls into any 4 other categories	Yes* N=1
			No N=10

*Qualifies as disadvantaged

TABLE 7

Summary of Classification of PSDS
Students as Disadvantaged

Group	1968	1969
Classified as Disadvantaged		
Number economically disadvantaged	27	25
Number not economically disadvantaged	1	1
Total Classified Disadvantaged	28 (70.0%)	26 (65.0%)
Not Classified as Disadvantaged	12 (30.0%)	14 (35.0%)
Total	40	40

The number of students falling into each of the nine categories, the exact criteria used in the determination, and the source of the information is contained in Appendix A.

Definition of Risk

A "risk" student may be defined as a student whose grades, and/or test scores are low and would normally keep him out of selective four year colleges.

Traditionally a student's admission to college has been heavily dependent upon his high school grade-point average and other intellectual measures. Research has supported the use of these predictors, since they are highly related to grades in college among white middle, upper middle, and upper socio-economic status students (Lavin, 1965). Colleges and universities have the tendency to define risk in terms of low SAT scores, low high school grade-point averages or both. Recently students with quite different cultural backgrounds have been admitted to college with greater and greater frequency. Since research has not yet been able to provide adequate prediction models for use in these new college populations, many students can be considered risks because they do not have the traditional academic credentials normally associated with college success. This risk status implies a higher than usual probability of failure in college.

The actual risk is two-fold. First the college and the community at large are investing resources in each student. These resources include both time and money. The cost of education is not covered by tuition alone, and frequently risk students are being partially or totally supported through financial aid anyway. The first type of risk, then, is to the college and the community, through loss of invested resources if the student does not successfully complete his course of study. In most cases, of course,

the loss would not be total. The second type of risk is related to the student himself. The student and his family are risking their capital and time in putting the student through college. This is an investment not totally reclaimed if the student does not complete his college work. Further, the student is risking the consequences of failure itself, a task uncompleted, defeat and frustration. It is possible that failure in college could have serious consequences on the student's self concept, self confidence, motivation, ambition and many other aspects of the student's psychic construct.

It must be recognized that the term risk is relative. Since over half of the first year PSDS students were accepted at state colleges or universities, it seems obvious that a risk student, at a selective college, may not be a risk at a less selective school. This point is illustrated by Egerton (1969, p. 15):

> "A risk at Harvard, where the median SAT score is about 1,300, would be a prize catch for many an institution which accepts any high school graduate. Not every youngster could succeed at Harvard, nor could Harvard succeed with every youngster--without surrendering its position (based in some measure on SAT scores) as the foremost institution in the nation. . ."

The PSDS program then, attempts to admit students who would be considered risks at the Claremont Colleges, and specifically to seek individuals who fall into the risk category by reason of disadvantaged background.

Any attempt to define risk in terms of high school grade-point averages and SAT scores will be substantially arbitrary; this is especially the case where one attempts to define a single set of criteria for all five of the undergraduate Claremont Colleges. In spite of this, a single standard will be formulated here as a preliminary standard. It is expected that this standard will be reconsidered and reformulated over the next year and that alternations will occur which will reflect differences in college admissions criteria. As an exception to the above model, Harvey Mudd College (HMC) will have a different level of SAT-math score specified.

Information published concerning the Claremont Colleges (College Entrance Examination Board, 1967) suggests that the average Claremont College student was in the top 10% of his high school class and made scores of about 625 on the verbal portion and about 600 (over 700 at HMC) on the mathematics portion of the SAT. Less than 5% of incoming freshmen at all five schools made scores of less than 550 on the verbal portion and 500 (650 at HMC) on the math portion of the SAT. Since these data were collected several years ago, these levels have tended to increase, and the definition of risk should reflect this change. In view of the above information, it would seem that a student with an SAT-verbal score below 550, with an SAT-math score below 700, or a combined SAT score below 1,050 (for HMC-SAT mathematics score below 650 a total below 1,200) would not generally be regularly admissible at the Claremont Colleges and therefore could be considered a risk student. Similar data concerning high school grades suggests that any applicant with a grade-point average of less than 2.75 on a four point scale would ordinarily not be admitted. For the purposes of this model a student who applied for regular admission at one

of the Claremont Colleges and who was rejected will be considered to have met the risk criteria; it is recognized that many students who have high SAT scores and a good high school grade-point average are turned down for admission because of the limited space available, but since these colleges are dedicated to admitting qualified minority students, it is assumed that the sole reason a minority student would not be regularly admitted would be because of his risk status.

The mean GPA for 1968 PSDS students was 2.79 on a 4.0 scale, and the mean class rank was just below the top quarter of their classes. The mean GPA for the 1969 students was somewhat less (2.49), and more than half of them were in the bottom quartile of their graduating class, indicating that they achieved at a lower level in high school than did the 1968 group. Surprisingly enough R-group 1's mean GPA was higher (2.69) than R-Group 2's mean GPA (2.14), the reverse of what might have been expected. It is interesting that the mean GPA for the 1968 group is above the level proposed in this report to define risk students, while the 1969 mean GPA is substantially below that level.

For the 1968 PSDS group, the mean Scholastic Aptitude Test (SAT) verbal score was 453.94 (with a range from 253-603), and the mean SAT math score was 461.41 (with a range of 316-742). Means for the 1969 group are similar and not statistically different. The mean SAT verbal score was 468.25 (with a range of 233-707), and the mean SAT math score was 438.92 (with a range from 220-717). All four of these means are well below the criteria established for the classification of a student as a risk.

The classification of the 1968 and 1969 students into the category of academic risk is summarized in Table 8.

TABLE 8

Classification of PSDS Students as Academic Risks

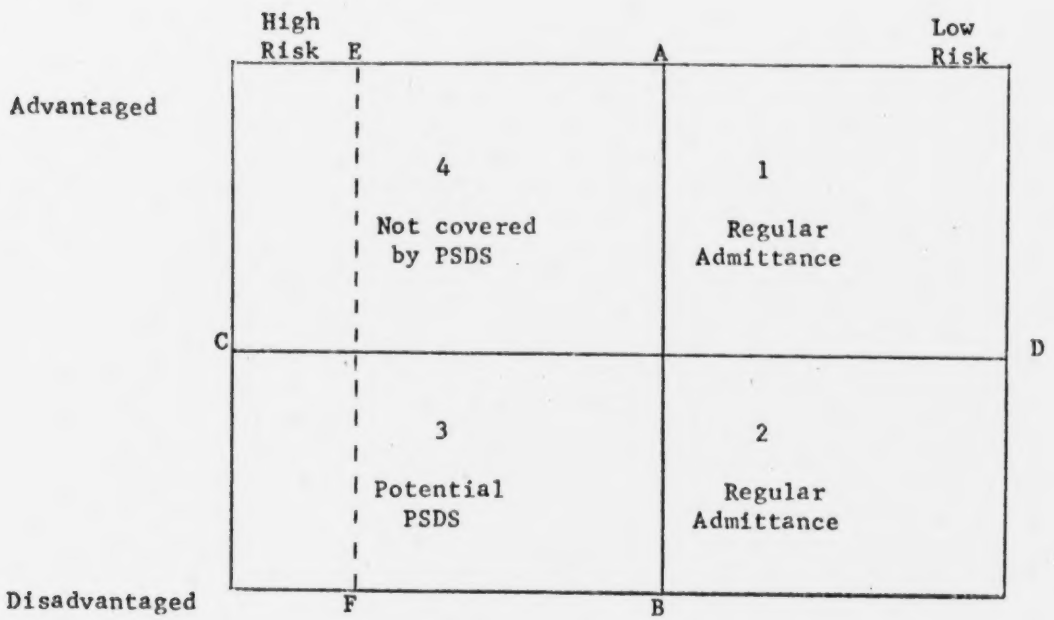
	1968	1969
Qualifies as a risk student	39	37
Does not qualify as a risk student	1	3
Total	40	40

The number of individuals falling into each category is summarized in Appendix 2.

The words "disadvantaged" and "risk" as applied to PSDS had not been clearly defined prior to this report. An attempt has been made to define these terms operationally, and data were presented which demonstrate that PSDS students are disadvantaged, at least in comparison to regularly admitted students. Further, data were presented which strongly indicated that the PSDS students were actually academic risks in comparison to the traditional requirements of the Claremont Colleges. Up to this point we must conclude that PSDS is meeting its stated goals of admitting disadvantaged students who are an academic risk. But, there is still the serious question whether the PSDS students were risks by virtue of their being disadvantaged. This concept is presented graphically in Figure 4.

FIGURE 4

Theoretical Population of PSDS Applicants



AB = risk criterion line: admit to regular status if to right, reject if to left
CD = disadvantaged criterion line: advantaged above, disadvantaged below
EF = absolute cutoff; applicants to left represent too great a risk to be considered for PSDS

As represented in this figure, the question that PSDS must ask when considering applicants for admission is, "If this applicant's disadvantaged status were removed, would he shift from quadrant 3 to quadrant 4, or from quadrant 3 to quadrant 1?" Obviously, PSDS wishes to accept those who will shift into quadrant 1. This report has thus far dealt with isolating those individuals who presently fall into quadrant 3; the remainder will be devoted to ways of distinguishing between individuals who would shift to quadrant 1 and those who would shift to quadrant 4.

Figure 5 has been prepared to summarize the classification procedure applied to the 1968 and 1969 PSDS students. It is constructed in the same way as Figure 4, but the actual numbers of students who fall into the four quadrants are given for the two years. It can be seen rather easily that students admitted to the program have overwhelmingly conformed to the definition of risk presented in this report. However, almost one out of every three students admitted has not been classified as a disadvantaged student. Admittedly, data are not available on all nine of the categories offered as the operational definition of disadvantaged, and were these data available, some additional students would undoubtedly be classified as disadvantaged. However, it should be noted that these data, since they are not available, could not possibly have been taken into consideration in the admissions procedure itself.

FIGURE 5

Distribution of Admitted PSDS Students
into Theoretical Population Categories

	High Risk (A)	Low Risk
Advantaged	Not Covered by PSDS 1968: 12 1969: 11	Regular Admittance 1968: 0 1969: 3
	C	D
Disadvantaged	Potential PSDS 1968: 27 1969: 26	Regular Admittance 1968: 1 1969: 0
	B	

A question, then, still remains about the consistency of the criteria which have been used in the past to select students for PSDS. In the next section a review will be made of some of the characteristics apparently used as admissions criteria in the past, and a model will be outlined which may point the way to more objective admissions procedures in the future.

PSDS Selection

This report so far has identified the population from which PSDS is to select its students. This population is presumably much larger than the forty students which can be selected each year, and therefore, some criteria must be established to aid in the selection of students with which the program can succeed. There is no sense whatever in bringing students to the Claremont Colleges who have no chance of benefiting from the resources available to them.

The PSDS selection procedure has been essentially very subjective in nature. Members of the PSDS staff, together with a group of seven students and several faculty members of the Claremont Colleges, read the student's written personal statements, and when possible, interview the student. While a few students are eliminated because they do not qualify as disadvantaged or risk (by some previously less rigorously specified definition), most are eliminated on some subjective, and as yet, not operationally defined basis. The Research and Appraisal staff has not in the past been able to offer a selection model which would tend to objectify the process. The object of this model would, of course, be to identify those students within the specified potential population, who could, in fact, succeed on the Program of Special Directed Studies. Success, a word which needs to be defined operationally and which will be considered in detail in a later section of this report, is essentially measured by a student's eventual graduation from a four year college or university, preferably one of the Claremont Colleges.*

In place of the regular college admissions criteria, PSDS is seeking students who show some traditionally unmeasurable quality which might be a sign of strength, an indication of probable college success. Based upon the original proposal, applicants have been selected who show "a marked intellectual ability and potential for academic achievement," presumably in other ways besides overall grade-point average or test scores. Unfortunately, this proposal was not very specific concerning what was meant by marked "ability and potential," though it did list the following: intellectual and emotional openness; eagerness and courage to encounter new experiences, ideas, and environments; creativity; ability to distinguish between what is hoped for and what is realistically possible; a sense of personal worth and of the extent and limitations of one's abilities; a sense of humor; a willingness to work hard over a long period; community leadership or family responsibility; and unusual skills in communication and in dealing with world problems. The above list of qualities, although impressive, is of small value to us since these qualities are very difficult to objectively define and measure during the admissions procedure. Therefore, to expand the original model, several

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*A preliminary report has been written dealing with PSDS student success at the Claremont Colleges. This report does not specifically identify objectives, but does consider several indications of student success (Spuck, 1969).

other characteristics are suggested below. All of these suggested criteria have face validity; that is, they appear, on casual inspection to be characteristic of the kind of student the program wants. In addition, all of them may be easily operationally defined and measured during the selection procedure. These are: 1) High performance in one or two high school subjects. 2) Evidence of marked improvement in last year of high school. 3) High grades at one point, with a subsequent decline, perhaps due to a loss of motivation or family problems. 4) High IQ accompanied by under-achievement. 5) Low measured IQ accompanied by over-achievement. 6) Musical or artistic talent. 7) Varied interests and extracurricular activities. 8) Successful employment experiences. 9) No history of family on welfare. 10) Steady improvement of grades in high school.

Through the use of some combination of these qualifications, in conjunction with the previously discussed criteria for classification as disadvantaged and as a risk, an extremely objective selection procedure could be developed for PSDS. However, there is a serious question whether students selected in such a manner could be any more successful at the Claremont Colleges than students selected any other way. The answer to this question can still be only imperfectly answered, because no PSDS students have yet graduated from college, but such evaluation as is possible at this time appears as the rest of this report.

Success: An Operational Definition

While no PSDS students have yet graduated from college, it is still possible to talk about the success of any one student or group of students on the program. To demonstrate this point, an examination of the steps necessary for graduation for a PSDS student is in order.

First, a student must be accepted at his home college as a regular student. The criteria for acceptance as a regular student have primarily been a) the completion of a certain number of courses with a grade average satisfactory to the PSDS administration and the admissions officers of the home college, and b) the subjective opinion of the PSDS administration that the student no longer needs the supportive services of the program to be successful academically.

Second, the student must pass enough courses to meet graduation requirements at his college. Although the exact requirements vary across the five colleges, about 32 courses (about 16 units per semester) are necessary for graduation.

Third, the student must maintain the minimum grade average necessary for graduation at his college, usually about 2.00 on a four-point scale.

Using these three steps toward graduation as the basis for evaluating success, the following operational definition was derived.

1) Leaving the PSDS Program

Scores are assigned according to the number of semesters a student must spend on the PSDS program, as described in Table 9.

TABLE 9

Measure of Success: Number of Semesters on PSDS

Number of Semesters on PSDS	Success Score
1	4
2	3
3	2
4	1
terminated	0
maximum possible score = 4	

2) Completing Courses

Scores are assigned according to the number of courses passed each year, as summarized in Table 10.

TABLE 10

Measure of Success: Number of Courses Passed

Number of Courses Passed Per year	Success Score
7 or more	4
5-6	3
3-4	2
1-2	1
0	0
Maximum possible score = 4 per year	

3) Grades After Leaving PSDS Program

Scores are assigned for each semester after a student has achieved regular status at his home college, as summarized in Table 11.

TABLE 11

Measure of Success: Grade Point Average

GPA for Semester	Success Score
$\geq$ 3.25	4
$\geq$ 2.75	3
$\geq$ 2.00	2
$<$ 2.00	0
maximum possible score = 4 per semester	

Under this system a student can score 12 points per year. Table 12 summarizes the maximum possible score per year for an individual student.

TABLE 12

Summary of Scoring Procedure for Measure of Total Success

First Year:	
Leaves program after one semester	4
Passes 7 or more courses during year	4
GPA $\geq$ 3.25 second semester	4
	12
Subsequent Years:	
GPA $\geq$ 3.25 first semester	4
GPA $\geq$ 3.25 second semester	4
Passes 7 or more courses during year	4
	12

The 1968 PSDS class achieved a mean success score for the 1968-69 school year of 4.95, with a range of scores from 0 to 12. At the end of their first school year, the entering 1969 class had a mean success score of only 3.20, also with a range of 0 to 12. The difference between means

for the two years is highly significant ($t = 4.8$, d.f. = 78, p less than .0005). At the end of their second year, the mean success score for members of the 1968 class was 8.75, with a range of 0 to 23.

It is obvious from these data that some individuals have done very well on the program, while others have done very poorly indeed. It is now time to look carefully at the differences between the successful and unsuccessful students on the program and to try to discover whether or not the admissions model proposed earlier can account for some of these differences in success.

Evaluation of the Admissions Model

In a previous section, ten possible criteria for admission to the PSDS program were suggested. By comparing the success of members of the 1968 and 1969 classes with the presence of these criteria, and with the more traditional admissions criteria, it should be possible to isolate variables which may be useful as predictors of success in future years.

Briefly summarized, these are the variables which were compared to the measure of success. Operational definitions and summary statistics for each criterion are shown in Appendix C.

1) High performance in one or two high school subjects
2) Evidence of marked improvement in last year of high school
3) High grades at one point, with a subsequent decline, perhaps due to a loss of motivation or family problems
4) High IQ accompanied by under-achievement
5) Low measured IQ accompanied by over-achievement
6) Musical or artistic talent
7) Varied interests and extracurricular activities
8) Successful employment experience
9) No history of family on welfare
10) Steady improvement of grades in high school
11) SAT Verbal score
12) SAT Math score
13) The Mooney Problem Check List
14) Qualification as a risk
15) Qualification as disadvantaged

The measures of success were the following:

1) College cumulative grade average (GPA)
2) Number of courses passed first year
3) Length of time on PSDS before transfer to regular status
4) The total success score developed in the last section

A brief explanation and rationale of the methods of analysis used will precede the data. First, it is important to remember that PSDS students are enrolled at five independent colleges. Sex and college are confounded since one school (Scripps) is exclusively women, one exclusively men (CMC), and a third (Pitzer) admitted men for the first time in 1969. Harvey Mudd College is coeducational, but overwhelmingly men, and Pomona College alone of the five is closely balanced between men and women. All five schools use different grading systems. Scripps changed from grades to pass-fail in 1969, and Harvey Mudd uses a modified pass-fail system for the freshman year only. CMC uses a traditional 4.0 grading system with no pluses or minuses, while Pomona has a 12.0 scale from D- to A. Pitzer uses a 4.0 scale, but also makes use of an intermmediate set of grades (AB, BC, etc.), which combine, for example, a B+ and an A-. Furthermore, students may cross-register for classes at different schools from their freshmen year on. Ideally, all analyses would be done by sex, year, and school. However, the total sample size involved is only 80, and breaking down this sample into the small groups necessary for analysis leaves groups as small as 2, and meaningful analysis is, unfortunately, nearly impossible. For that reason, analysis has been done for larger groups, minimizing errors where possible by such tactics as the introduction of an arbitrary grading system which partially standardizes grades at the five colleges, and using number of courses passed (1 course equals 4 units) as a measure of success. Obviously, this methodology is subject to criticism, but given the tremendous obstacles raised by the cluster college system, some precision had to be sacrificed to avoid throwing out the baby with the bath. The major findings will now be presented.

Analysis was first done separately for the two years, and Tables 13 and 14 summarize the findings.

TABLE 13

Correlation of Admission and Success Criteria
1968 Class

	Cum GPA	Courses Passed	Leaves PSDS	Total Success
SAT Verbal	-.1142	-.276*	-.065	-.061
SAT Math	.1170	-.072	-.038	-.111
Disadvantaged	-.1130	-.176	-.212	-.252
Risk	-. 273*	-.088	-.051	-.035
(1) High performance, one or two subjects	. 162	-.096	-.336*	-.087
(2) Marked improvement last year	- .330*	.000	-.323*	-.289
(4) Under-achievement	- .422**	-.328*	-.109	-.377*
(6) Musical-Artistic	- .082	.112	-.027	-.015
(7) Extracurricular Activ.	.039	-.070	.031	.209
(9) No Welfare	- .048	.099	.099	.019
Total Admission (Sum of all 10 variables)	.032	-.148	-.341*	-.082

*P less than .05 **P less than .01

TABLE 14

Correlation of Admission and Success Criteria
1969 Class

	Cum GPA	Courses Passed	Leaves PSDS	Total Success
SAT Verbal	-.161	-.068	-.140	-.090
SAT Math	.097	.086	-.172	-.050
Disadvantaged	-.072	.114	-.222	-.063
Risk	-.201	-.090	-.116	.004
(1) High performance one or two subjects	.362*	-.085	.486**	.172
(2) Marked improvement last year	.101	.096	.196	.052
(4) Under-achievement	-.313*	-.079	-.281	-.161
(6) Musical/Artistic	.340*	.079	.415*	.332*
(7) Extracurricular Activ.	.441**	.143	.423*	.291*
(9) No Welfare	.321*	.354*	.580**	.316*
Total Admission (Sum of all 10 variables)	.475**	.071	.543*	.249

*P less than .05 **P less than .01

Some explanation of Tables 13 and 14 is in order. First, it must be kept in mind that cumulative GPA and leaving PSDS are not independent variables, since the former is used in reaching a decision on the latter. Second, remember that there are important differences in sex and in college which have been ignored in this overall analysis. This includes differing methods of grading at the individual colleges, which have been approximately standardized for purposes of this analysis. Third, although entirely different variables seem to be related to success for the two classes, it is important to keep in mind the highly significant difference in overall success for the two classes. Fourth, admission variables 3, 5, 8, and 10 did not significantly correlate with any success criteria either year. Finally, the data for 1968 are incomplete, because eight students, seven of whom are now on regular status, refused or were unavailable to sign transcript release forms to make their grades available to this office. This restriction of range at the high success end of the distribution may in part explain the seeming lack of significant correlations for the 1968 class.

One very interesting finding concerns the relationship of the traditional admissions criteria to the measures of success. SAT verbal scores correlated significantly only with number of courses passed for the 1968 group, and that was a negative correlation. SAT math was not significantly related to any of the measures of success for either year.

Degree of academic risk was negatively correlated only with cumulative grade average for 1968, and the same relationship barely missed significance for the 1969 group as well. Generally speaking, the data plainly indicate that the traditional admissions criteria do not predict success for PSDS students.

The data for the 1969 class suggested five variables which were related to success. With the exception of variable 4, under-achievement, all were positively related. In order to strengthen the admission model variable 4 was reversed, so that a score on this variable indicated no under-achievement, and the 5 variables were combined to form a new total admission score. Table 15 shows the relationship of this measure to success.

TABLE 15

Correlation of Revised Admission Total and Success
1969 Class

	Cum GPA	Courses Passed	Leaves PSDS	Total Success
Admission Total (Sum of variables 1, 4 reversed 6, 7, 9)	.598***	.104	.598***	.334*

*P less than .05

***P less than .0005

It seemed inappropriate to conclude from this overall analysis that the admission model, as revised in Table 15, was now refined and ready to use in the selection of future PSDS students. At this point then, the two years of PSDS were combined, and analysis was made by sex and by college. These results are described below.

Table 16 summarizes the results of the analysis for men (N=43). Note that the musical/artistic variable is not among those significant for men, but that successful employment experience is highly significant. The other significant variables for men are the same as those making up the 1969 revised model. Notice, however, that disadvantaged and risk status are negatively related to success for the men.

TABLE 16

Correlation of Admission Model and Success
Men - 1968 and 1969 Combined

	Cum GPA	Courses Passed	Leaves PSDS	Total 1st Year Success
SAT Verbal	-.113	-.256*	-.095	-.173
SAT Math	.305*	.003	.128	-.008
Disadvantaged	-.216	-.289*	-.466**	-.413***
Risk	-.280*	.023	-.071	.005
(1) High Performance One or Two Subjects	.289	.087	-.320*	-.038
(4) Underachiever (Reversed)	.380*	.251	.086	.195
(7) Extracurricular Activ.	.383**	.342*	.315	.349*
(8) Employment Experience	.421**	.338*	.346*	.276*
(9) No Welfare	.208	.349*	.105	.182
Total Admission (Sum of all 10 variables)	.412**	.338*	-.046	.195
*P less than .05 **P less than .01		***P less	than .005	

When the five significant admission variables for men were combined into a revised model, the results were as follows in Table 17.

TABLE 17

Revised Admission Model for Men

	Cum GPA	Courses Passed	Leaves PSDS	Total 1st Year Success
Revised Total Admission for Men (Sum of Variables 1, 4 reversed, 7, 8, 9)	.527**	.359*	-.020	.214
*P less than .01		**P less than	.0005	

For women the picture was quite different. Correlations generally were not as great, and there were far fewer significant relationships. For example, while variables 7 and 9, extracurricular activity and no welfare were significant predictors of success for men, no significant relationship was observed for the women. Table 18 summarizes the findings for women (N=37).

TABLE 18

Correlation of Admission Model and Success
Women - 1968 and 1969 Combined

	Cum GPA	Courses Passed	Leaves PSDS	Total 1st Year Success
SAT Verbal	-.214	.049	-.031	.060
SAT MAth	-.092	.173	-.230	.014
Disadvantaged	.103	.315*	.090	.063
Risk	-.171	-.319*	-.109	-.158
(1) High Performance One or Two Subjects	.239	-.184	.126	.103
(4) Under-achiever (Reversed)	.319*	.042	.220	.183
(6) Musical/Artistic	.284	.054	.122	.220
(8) Employment experience	-.244	-.220	-.349*	-.060
Total Admission (Sum of all 10 variables)	.149	-.232	-.029	.051

*P less than .05

When the employment variable is reversed, and a new total is constructed from the four variables in Table 18, the results are more encouraging. Table 19 summarizes these data.

TABLE 19

Revised Admission Model for Women

	Cum GPA	Courses Passed	Leaves PSDS	Total 1st Year Success
Revised Total Admission for Women (Sum of Variables 1, 4 reversed, 6, 8 reversed)	.261	-.181	.092	.176

It appears from these data that different criteria should be used in selecting men and women for the PSDS program, and that for women individual variables predict success with greater reliability than even the revised admission model (compare Tables 18 and 19). In Table 20 a comparison is made between the variables which predict success most highly for the two sexes.

TABLE 20

A Comparison of Variables Predicting Success for Men and Women

Men	Women
(1) High grades one or two subjects	(1) High grades one or two subjects
(4) Not an under-achiever	(4) Not an under-achiever
	(6) Musical/artistic talent
(7) Extracurricular activities	
(8) Employment experience	(8) No employment experience
(9) No welfare	

Analysis was also completed by school, and the results showed different variables of importance at the different schools. At Pomona College the sample was large enough (N=25) that correlation would have been of some use, but for the sake of consistency a chi-square analysis was used at all five schools. Sample sizes at the other schools were Pitzer (18), Scripps (15), Claremont Men's (16), and Harvey Mudd (6).

In the examination of the data by college, it becomes obvious that certain of the variables are predictive only at certain colleges,and that in fact some variables may be positive predictors at one college and negative predictors at another. An example of this is variable 8, successful employment experience. At CMC a high positive relationship exists between employment experience and leaving PSDS for regular student status. (p=.091). Notice, however, that at Pitzer College the same variable is negatively related to leaving PSDS (P=.011). In Table 21, (p. 27) college by college, the significant admission variables are shown with their respective probabilities determined by the Fisher exact test (Siegel, 1956). Only variables with a probability of less than .10 are included in the table. Harvey Mudd College is not included in the analysis because of a lack of significant data and a very small sample size.

Following this analysis, revised admission totals were computed for each college by adding together only those variables which were best related to success for that college. Some variables included in these revised totals were not themselves significantly related to success, but all had positive relationships approaching a traditional level of significance. Table 22 shows the relationship between these revised admission totals for the colleges and the measures of success.

TABLE 21

Table of Probabilities from Fisher Exact Test: by College (All variables included in revised admission models are listed, but only probabilities less than .10 are shown)

Variable	Cum GPA	Courses Passed	Leaves PSDS	Total 1st Year Success
Pomona College				
Underachievement (Reversed)	.Q10	.045	.071	---
Extracurricular activities	---	.---	.020	.020
Successful employment experience	.084	---	---	---
Total admission model (All ten variables)	.095	---	---	.063
Pitzer College				
Overachievement	---	---	---	---
No Successful Employment Experience	---	---	.011	---
Scripps College				
High Performance one or two high school subjects	---	---	---	.024
Musical or artistic talent	---	---	---	---
No steady improvement in high school	---	---	---	---
Claremont Men's College				
Extracurricular activities	---	---	---	---
Successful employment experience	---	---	.091	.020

TABLE 22

Revised Admission Totals for Each College:
Exact Probabilities from Fisher Test

	Cum GPA	Courses Passed	Leaves PSDS	Total 1st Year Success
Pomona Total (Sum of 4 reversed, 7, 8)	.027	.144	.072	.047
Pitzer Total (Sum of 5, 8 reversed)	.029	.358	.085	.085
Scripps Total (Sum of 1, 6, 10 reversed)	.183	.158	.010	.010
CMC Total (Sum of 7, 8)	.159	.154	.093	.019

These data about the admission model indicate plainly that there are certain non-traditional criteria, simply and easily measured during the application procedure, which are much more highly related to success on the program than are traditional admission criteria. When used in a combination with each other in a total admission score that takes sex and college into account, the prediction of success can be even more firmly stated, although the relationship is far from a perfect one.

One additional set of variables was compared to the measures of success. This instrument, the Mooney Problem Check List, is not usually administered prior to the selection process, but was compared to success in this case to determine whether personal problems might in some way be related to success. Only one relationship stands out, between the Adjustment to College Work (ACW) Scale and number of courses passed. The correlation was a positive one for the 1968 class ($r=.358$, $N=36$, $P<.025$), and it suggests that the more problems a student believes he will have adjusting to college work, the more classes he will pass. Although this was the only outstanding relationship observed, this is not to suggest that emotional disturbance has no effect on success in the program, particularly since the PSDS staff members have found a number of students on the program who readily admit to having not checked all their problems on the Mooney Problem Check List.

This completes the examination of admission variables and their comparison to the measures of success. It seems entirely reasonable and consistent with these data to suggest that certain non-traditional variables should be carefully considered in the admission process, taking the sex and proposed home college of the applicant into consideration. In the next and final section a series of concrete recommendations for future admissions procedures will be presented, with the data in this report offered as supporting evidence.

Specific Recommendations for the Admissions Procedure

1. Consider for admission only those students who meet the criteria of being both academic risks and disadvantaged.

   a. Revise the application forms to ensure that the information necessary to determine disadvantaged and risk status is available at the time of selection.

   b. Refer those who do not fall into both of these groups to regular admissions.

2. Use the admission variables found in this report to be related to success as an important tool in the final decision process.

   a. Revise the application forms to ensure that all important information is available before the selection procedure. Examples: employment experience, tangible evidence of musical or artistic talent, and extracurricular activities.

   b. Compute an admission total score for each applicant according to his sex and for each of the colleges for which he is being considered.

   c. If an applicant is being admitted who qualifies for one of the negative success variables (under-achievement, for example), avoid placing him into a school where the variable is most highly correlated with failure (Pomona College, for example).

   d. Use the operational definitions contained in Appendix C to compute admission scores, and combine the variables into the revised sex and college totals described in Tables 17, 19, 20, 21 and 22.

3. There will, of course, be individual cases where additional external circumstances will make the use of this model meaningless. The highest correlations obtained between a total admission score and success were about .6, and such correlations only account for about .36 of the variation between the two variables. The overall success rate for PSDS should increase following the application of this model to the admission process, but the success or failure of each individual student is affected by many more things than employment experience, or musical talent. Some individuals with high admission total scores will fail gloriously, and others with low total scores will be tremendously successful. In other words, while this model suggests a way of increasing the overall rate of success, it must be used carefully and without blind reliance on its variables for admission of students to the Program of Special Directed Studies.

4. Harvey Mudd College was largely ignored in the construction of admission models. This is partly due to the extremely small sample at HMC and partly to the lack of success of this small sample during the last two years. For those reasons no specific recommendations for admissions at HMC are being offered beyond the general models for the sexes. The whole subject of PSDS at HMC was discussed in an informal report from the Research and Appraisal Office (1970), and that material does not need review here.

5. Recommendations one through four outline an admissions policy which is expected to lead to a higher rate of overall success. The authors advocate the use of these recommendations based on the data presented in this report. If the administration of PSDS wishes, for example, not to consider a background of welfare in the admissions procedure, that would be a purely administrative decision based on a redefinition of the kind of student the program wishes to serve. This report only suggests that to do so without changing the program will lower the overall rate of success. On a personal level that means raising the hopes and expectations of a larger number of students who have a very high probability of failure. The authors believe that this program, and all college programs, need to weigh the moral issues raised by admitting students with a very high probability of failure against those raised by the systematic exclusion of applicants on the basis of variables over which they may have had little or no control. Furthermore, it cannot be denied that the implementation of the recommendations in this report may be viewed by some as subjecting minority applicants to a set of admission standards which seems, externally at least, every bit as arbitrary as the traditional criteria for admission. The authors recognize this as a problem, but a problem common to every admission criterion of every program which has more applicants than positions available. The authors firmly believe that graduation from one of the Claremont Colleges is the ultimate success for any student admitted to PSDS, and that every student admitted should have the best possible opportunity to reach that goal. It is because of these beliefs that the authors advocate the use of this admission model in the future selection of students for the Program of Special Directed Studies.

Appendix A

Data on the Classification of PSDS Students as Disadvantaged

The operational definition and source of information is given for each of the nine categories, followed by a table showing the distribution of the 1968 and 1969 PSDS students within that category.

1) The student is from a minority group.

Any non-Anglo student was classified as a minority student. In the few cases where the student was of mixed ancestry and group membership was in doubt, he was considered to be a minority group member. For example, a student is considered to be an American Indian by PSDS and the Bureau of Indian Affairs if he has only 1/8 American Indian ancestry. This information was gathered from the admissions applications, which contained a question about minority group membership, usually included a photograph of the applicant, and the student's own statements about himself.

TABLE A-1

Ethnicity of PSDS Students

Ethnic Group	1968	1969
Mexican-American	26 (65.0%)	20 (50.0%)
Black	11 (27.5%)	7 (17.5%)
Oriental		1 (2.5%)
American Indian		7 (17.5%)
Caucasian	2 (5.0%)	4 (10.0%)
Other	1 (2.5%)	1 (2.5%)
	40 (100.0%)	40 (100.0%)

2) He comes from a low-income family or a family whose limited income must be divided among a large number of dependents.

The table which was used to determine low family income was included in the body of the report (Page 5) and will not be repeated here. The information was obtained from financial statements prepared for use by the PSDS Office in determining the budget for each student. Because of the confidential nature of these financial statements, no breakdown will be made beyond that which appeared in Figures 2 and 3 (Page 10).

3) He has had to work to support his family.

For the 1968 and 1969 groups no systematic assessment of students working to support their families was made. The available information for 1968 and 1969 was volunteered by the student himself in his college application or during an interview; no attempt has been made to verify the information, and no information about the length of time or number of hours worked, or the percentage of that income which was actually made available to the family is available. This information has been included in the preliminary questionnaire for the 1970 class.

TABLE A-2

Percent of Students Who Worked to Help Support Their Families

	1968	1969
Yes	8 (20.0%)	6 (15.0%)
No	32 (80.0%)	34 (85.0%)
	40 (100.0%)	40 (100.0%)

4) He has been deprived of the material possessions, such as books and magazines; or has not experienced the activities, such as private music lessons, camp and travel, normally associated with children growing up in advantaged homes.

A score of 45 or below in the Environmental Participation Index was considered indicative of disadvantaged status. A score of 45 is the midpoint of the interval designated "Average" (see Table 3). When this definition is applied, the following distribution results:

TABLE A-3

Percent of Students Disadvantaged by EPI Standards

	1968	1969
Not Disadvantaged	20 (50.0%)	22 (55.0%)
Disadvantaged	20 (50.0%)	18 (45.0%)
	40 (100.0%)	40 (100.0%)

5) Because of his home living situation, he has had no adequate place to study.

No attempt was made to collect these data from the 1968 and 1969 groups. Because of the lack of data, no student was judged to fall into this category. This information has been requested in the 1970 preliminary questionnaire.

6) He has difficulty with the English language.

A student was judged to have trouble with the English language if he met one of three criteria. These are: 1) His parents speak a language other than English 50% or more of the time. 2) The student speaks a language other than English 30% or more of the time he is not in class. 3) The student received no grade in high school English higher than C. No student fell into category three without also meeting the criteria of one of the other two categories. Information for categories one and two was obtained from the preliminary questionnaires which each student filled out during the summer before entering the Claremont Colleges. The grade information was obtained from the student's high school transcript.

TABLE A-4

Percent of Students Having Difficulty with the English Language

	1968	1969
Yes	18 (45.0%)	13 (32.5%)
No	22 (55.0%)	27 (67.5%)
	40 (100.0%)	40 (100.0%)

7) He has attended elementary and secondary school which may not have adequately prepared him academically for college; he has not developed an average reading speed or good study habits.

No attempt was made to collect these data from the 1968 and 1969 groups. Some limited information was available about reading speed, but no consistent normative data was available. Because of the lack of data, no student was judged to fall into this category.

8) His home life has involved not living with his complete or natural family, having both parents employed, or frequently having changed places of residence.

A student could qualify for this category in three ways: 1) If he were not living with both his natural father and his natural mother; 2) If he were living with both parents, and they both worked full time; or 3) His high school transcript indicated he had attended three or more different high schools. The information concerning with whom the student lived was obtained from the application forms. Information about both parents working was also obtained from the application forms or from the parents' financial statement. Number of high schools

attended was noted from the official transcripts of the student. The following table shows the total number of students from each year who qualified for inclusion in this category.

TABLE A-5

Percent of Students from Unusual Family Situation

	1968	1969
Disadvantaged Home Life	18 (45.0%)	27 (67.5%)
Non-disadvantaged Home Life	22 (55.0%)	13 (42.5%)
	40 (100.0%)	40 (100.0%)

9. He has a police record.

As reported in the body of this report, no attempt has been made to collect this information.

Appendix B

Data on the Classification of PSDS Students as Risk

1) SAT Verbal Scores.

Scores below 550 are considered indicative of academic risk status. The following table summarizes the 1968 and 1969 classes.

TABLE B-1

Distribution of SAT Verbal Scores

	1968	1969
SAT Verbal <550	34 (85.0%)	31 (77.5%)
SAT Verbal ≥550	6 (15.0%)	9 (22.5%)
	40 (100.0%)	40 (100.0%)

2) SAT Math scores.

Scores below 500 (HMC=650) are considered indicative of academic risk status. The following table (Page 36) summarizes the available data.

TABLE B-2

Distribution of SAT Math Scores

	1968	1969
All schools except HMC:		
SAT Math < 500	30 (81.1%)	28 (77.8%)
SAT Math ≥ 500	7 (18.9%)	8 (22.2%)
	37 (100.0%)	36 (100.0%)
HMC: SAT Math < 650	1 (33.3%)	2 (50.0%)
SAT Math ≥ 650	2 (66.7%)	2 (50.0%)
	3 (100.0%)	4 (100.0%)
Total:		
SAT Math < Criterion	31 (77.5%)	30 (75.0%)
SAT Math ≥ Criterion	9 (22.5%)	10 (25.0%)
	40 (100.0%)	40 (100.0%)

3) SAT Combined.

Scores below 1,050 (HMC: below 1,200) are considered indicative of academic risk. The following table summarizes the available data.

TABLE B-3

Distribution of SAT Combined Scores

	1968	1969
All schools except HMC:		
SAT Combined < 1,050	32 (86.5%)	29 (80.6%)
SAT Combined ≥ 1,050	5 (13.5%)	7 (19.4%)
	37 (100.0%)	36 (100.0%)
HMC:		
SAT Combined < 1,200	2 (66.7%)	2 (50.0%)
SAT Combined ≥ 1,200	1 (33.3%)	2 (50.0%)
	3 (100.0%)	4 (100.0%)
Total:		
SAT Combined < Criterion	34 (85.0%)	31 (77.5%)
SAT Combined ≥ Criterion	6 (15.0%)	9 (22.5%)
	40 (100.0%)	40 (100.0%)

4) Grades.

A GPA less than 2.75 (on a 4.0 scale) is considered indicative of academic risk. The following table summarizes these data.

TABLE B-4

Distribution of High School Grades

GPA	1968	1969
GPA < 2.75	21 (52.5%)	25 (62.5%)
GPA ≥ 2.75	19 (47.5%)	15 (37.5%)
	40 (100.0%)	40 (100.0%)

5) Rejection for regular admission at one of the Claremont Colleges.

Rejection for regular admission at any of the Claremont Colleges is considered indicative of academic risk. The following table summarizes these data. The category "not rejected" includes those who did not apply for regular admission.

TABLE B-5

Percent of Students Rejected for Regular Admission

	1968	1969
Rejected	6 (15.0%)	7 (17.5%)
Not Rejected	34 (85.0%)	33 (82.5%)
	40 (100.0%)	40 (100.0%)

6) Totals.

Many students were classified as academic risks in more than one category. The following table (Page 38) summarizes these data.

TABLE B-6

Summary of Risk Classification

Classified Risk By:	1968	1969
1 criterion	1 (2.5%)	4 (10.0%)
2 criteria	7 (17.5%)	1 (2.5%)
3 criteria	14 (35.0%)	12 (30.0%)
4 criteria	16 (40.0%)	18 (45.0%)
5 criteria	1 (2.5%)	2 (5.0%)
	39 (97.5%)	37 (92.5%)
	1 (2.5%)	3 (7.5%)
	40 (100.0%)	40 (100.0%)

Appendix C

Operational definitions for each of the ten original variables in the admission model are given below, along with tables showing the number of students falling into each category.

TABLE C-1

High Performance in High School Subjects

Score on This Variable	1968 N	1968 %	1969 N	1969 %
0	14	335.0	20	50.0
1	11	27.5	13	32.5
2	7	17.5	2	5.0
3	5	12.5	2	5.0
4	2	5.0	3	7.5
5	1	2.5	0	0.0
	40	100.0	40	100.0

2) Improvement in last year of high school.

To qualify, a student had to show an improvement in his grades of 1.00, comparing his last year to his next to last year. Table C-2 summarizes these data.

TABLE C-2

Improvement Last Year of High School

	1968 N	1968 %	1969 N	1969 %
Improvement	2	5.0	3	7.5
No Improvement	38	95.0	37	92.5
	40	100.0	40	100.0

It is obvious that not enough students qualified for this variable to expect any statistically reliable relationship with success.

3) High grades at one point, followed by a subsequent decline.

Any student who showed a semester GPA 1.50 less than his previous semester GPA qualified.

TABLE C-3

Sharp Decline in Grades

	1968 N	1968 %	1969 N	1969 %
Decline	2	5.0	1	2.5
No Decline	38	95.0	39	97.5
	40	100.0%	40	100.0%

Again, this variable could hardly be expected to show a statistically reliable relationship with success.

4) High IQ accompanied by underachievement.

A student with a measured IQ of 120 or greater (any available test result) with a high school GPA $\geq$ 2.75 qualified.

TABLE C-4

Underachievement

	1968 N	1968 %	1969 N	1969 %
Underachievement	8	20.0	8	20.0
No underachievement	32	80.0	32	80.0
	40	100.0	40	100.0

5) Low IQ accompanied by overachievement.

A Student with a measured IQ $\geq$ 85 (highest available test result) with a high school GPA $\geq$ 2.50 qualified.

TABLE C-5

Overachievement

	1968 N	1968 %	1969 N	1969 %
Overachievement	2	5.0	1	2.5
No overachievement	38	95.0	39	97.5
	40	100.0	40	100.0

Again, the small number qualifying make statistical analysis difficult.

6) Musical or artistic talent.

A student could qualify in several ways: all A's in high school music, art, or drama classes; professional experience; a particular mention of interest; or the recommendation of his talent by someone writing for him.

TABLE C-6

Musical/Artistic Talent

	1968 N	1968 %	1969 N	1969 %
Musical/Artistic talent	6	15.0	4	10.0
No Musical/Artistic talent	34	85.0	36	90.0
	40	100.0	40	100.0

7) Varied interests and extracurricular activities.

A student mentioning four or more high school extracurricular activities, while maintaining a GPA of 2.50 or greater, qualified.

TABLE C-7

Extracurricular Activities

	1968 N	1968 %	1969 N	1969 %
Extracurricular activities	24	60.0	14	35.0
No extracurricular activities	16	40.0	26	65.0
	40	100.0	40	100.0

8) Successful employment experience.

A student qualified if he took a job and maintained a difference of no greater than 0.50 in his high school GPA between the first semester he worked and the semester just prior to his working. A student could not qualify if he was fired from his job.

TABLE C-8

Employment

	1968 N	1968 %	1969 N	1969 %
Employment	23	57.5	7	17.5
No Employment	17	42.5	33	82.5
	40	100.0	40	100.0

9) No history of family on welfare.

A student was qualified on the basis of data available.

TABLE C-9

Welfare

	1968 N	1968 %	1969 N	1969 %
No history of welfare	29	72.5	30	75.0
History of welfare	11	27.5	10	25.0
	40	100.0	40	100.0

10) Steady improvement in high school.

A student whose semester grades improved four straight semesters qualified, regardless of the amount of improvement.

TABLE C-10

Steady Improvement

	1968 N	1968 %	1969 N	1969 %
Steady Improvement	3	7.5	6	15.0
No Steady Improvement	37	92.5	34	85.0
	40	100.0	40	100.0

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